Attachment 1: Framework for 2017 Sea Grant-NOAA Regional Integration Work Plan

Region: Gulf of Mexico

Project Title: Developing an Enhanced Community Resilience Index for the Gulf of Mexico

Personnel:

Sea Grant:

Lead Program Director: Robert Twilley, Ph.D.
Project Lead (if different from Program Director): Melissa Daigle, J.D.
Secondary Contact: Matt Bethel, Ph.D.

Regional Collaboration Team:

Regional Team Lead/Co-lead: Brian LaMarre
Regional Coordinator: Kristen Laursen
Secondary Contact: Becky Allee

Project Description:

What Regional Collaboration and Sea Grant priorities will this support?

- This project will support activity themes within the Gulf of Mexico Regional Collaboration Team's implementation plan, in particular:
    - Improve resilience of coastal communities and ecosystems to all (i.e., natural or man-made) hazards / hazard events
        - Support the Climate and Resilience Outreach Community of Practice
    - Increase internal understanding of NOAA programs and activities and link/leverage activities to improve efficiencies
        - Foster connections and collaborations with the Gulf of Mexico Sea Grant Programs, for example with regard to StormReady and underserved/underrepresented communities, and regarding resilience.
- This project will support several priorities under the Resilient Communities and Economies focus area of the 2014-2017 National Sea Grant Strategic Plan, specifically:
    - Goal 9: Resilient coastal communities adapt to the impacts of hazards and climate change.
        - Learning outcome 6.22 – Decision-makers are aware of existing and available hazard- and climate-related data and resources and have access to information and skills to assess local risk vulnerability.
        - Learning outcome 6.23 – Communities have access to data and innovative and adaptive tools and techniques to minimize the potential negative impact from hazards.
        - Action outcome 6.25 – Communities apply best available hazards and climate change information, tools, and technologies in the planning process.
        - Action outcome 6.26 – Decision-makers apply data, guidance, policies and regulations to hazard planning and recovery efforts.

        - Action outcome 6.27 – Communities develop and adopt comprehensive hazard mitigation and adaptation strategies suited to local needs.
        - Consequence outcome 6.31 – Communities are resilient and experience minimum disruption of life and economy following hazard events.
    - Goal 7: Communities use comprehensive planning to make informed strategic decisions.
        - Action outcome 6.10 – Communities make use of tools and information to explore the different patterns of coastal development, including community visioning exercises, resource inventories and coastal planning.

What do you plan to achieve/goals for this project?

This project will focus on creating an "Enhanced Coastal Resilience Index" through the use of participatory mapping and inclusion of NOAA visualization and decision-support tools. The Coastal Resilience Index (CRI; available online at http://masgc.org/coastal-storms-program/resilience-index) is an inexpensive self-assessment that communities can use to evaluate their resilience to coastal hazards. While the community does receive a resilience score, the score is not the most important outcome of the facilitation; the discussion that develops around the series of questions almost always highlights areas where the community would be best served in focusing resources. The CRI is usually led by a trained facilitator and takes 2-3 hours of time to complete. It has been implemented in all five Gulf states; over 55 communities have participated. Project Lead Daigle has facilitated almost twenty CRIs in fourteen different communities across the Louisiana coast. Additionally, the CRI has been formally evaluated through a community participant study. Survey results show that "100% [of respondents] felt that the [CRI] exercise helped them understand the potential risks that their community faces from a coastal storm, and 100% felt the CRI reflects the needs of their community" (CRI Evaluation Report, available at http://masgc.org/coastal-storms-program/resilience-index).

While the CRI evaluation has shown that the tool is very well received by and beneficial for communities, there are some areas in which it can be improved. This project seeks to enhance the CRI and extend its use by including a participatory mapping component and formal online tool inclusion to the CRI facilitation. Dr. Bethel has developed a participatory mapping method to enhance community engagement and local knowledge integration to help inform decision-making related to local issues, needs, and priorities such as coastal hazard mitigation planning. Similarly, there are several online tools that could benefit the communities when going through the CRI, but many communities either are unaware of their existence or do not understand how to utilize them to benefit their resiliency planning process. An example of a tool we could include would be the NOAA Sea Level Rise Viewer, which provides a way for communities to see the impacts from coastal flooding or sea level rise (up to 6 feet) though inundation maps and photo simulations. Another example of a tool would be the Coastal Flood Exposure Mapper, which creates maps that show the people, places, and natural resources exposed to coastal flooding. The project team will strive to incorporate NOAA tools, and will utilize an advisory board specifically created for this project (detailed below) to discuss how these and other tools can be best incorporated into the CRI.

The project team has outlined the research project as follows. First, the project team will develop a template for how mapping and digital tools can be used in conjunction with the CRI. They will present this template to a focus group, composed of partners, community leaders who have utilized the CRI, other trained facilitators, and tool developers at a one- to two-day-long focus group meeting. This group will be able to provide guidance on tool selection, best ways to incorporate mapping, and how mapping can best supplement and improve the CRI process. Likewise, the focus group can provide information about complementary projects. The project team will incorporate the information gained from the focus group into the template for the enhanced CRI.

Next, the project team will select 2-3 communities to pilot test the enhanced CRI. Community selection will be determined by input from the focus group, past experience with the CRI, ability to travel to the community location, and range of community types and locations. If a trained CRI facilitator is located in the area of a pilot community, the project team will work closely with that facilitator for local input. The project team will work to incorporate one community near the Gulf of Mexico Climate Community of Practice (CoP) meeting in Texas in order to leverage travel funding and community participation in the CoP meeting (location and date of CoP TBD). The project team will also utilize the CoP meeting as a way to present the project progress and get feedback from a large group of potential end users.

After the pilot tests are complete, the project team will refine the Enhanced CRI facilitation method and provide training webinars to other facilitators in order to disseminate project findings throughout the Gulf of Mexico region. This training will be offered as a stand-alone to individuals who have already been trained in CRI facilitation, and as an add-on to future CRI facilitator trainings. Currently, the CRI training team, of which Daigle is a member, provides online trainings approximately every 2-3 months for new facilitators. Daigle has received approval from the training team to incorporate the enhanced training into those sessions.

What are your expected product(s) and results(s)?

- CRI focus group report on best practices to incorporate participatory mapping, tools, and other enhanced CRI features
- CRI pilot test report from 2-3 pilot communities, outlining what enhanced features worked, which didn't, and next steps.
- Pilot communities will be trained in selected tools and will be able to use those tools through formal integration with the CRI (not simply used as an interesting visualization in the assessment, but rather trained/used as effective ways to evaluate options/alternatives that the community can consider to improve their resilience).
- Final methodology for the enhanced CRI.
- Training opportunities for CRI facilitators so that communities across the Gulf have access to the enhancements.

Project Rationale:

How does this strengthen the Sea Grant - Regional Collaboration relationship?
Sea Grant and NOAA Regional Collaboration in the Gulf of Mexico Region have a well-established relationship. The Sea Grant Programs have had a seat in the Gulf of Mexico Regional Collaboration Team since its inception. Developing the Climate

and Resilience Community of Practice (CoP) over time has added to this relationship. This project strengthens the Sea Grant – Regional Collaboration relationship by building on the existing CoP partnerships to address community self-assessment needs. It weaves an effective evaluation tool (the CRI) with tools NOAA has developed to help communities make informed decisions about their future plans and enhancing their own resilience to natural hazards like storm surge and inundation.

How does this benefit stakeholders in the region?
Communities will have new and innovative ways to use existing tools to evaluate their resilience. This can, over time, impact community planning and decision making, leading to communities that have given thought to how decisions impact resilience. It will also help communities prioritize resilience weaknesses and/or adaptation options under limited resources, including funds and staff time. Additionally, by training facilitators across the five Gulf states on the application of the enhanced CRI, communities across the Gulf will be able to utilize selected tools that can help them take the results of the CRI and better apply them to resilience solutions in their home communities. This concerted effort to formally integrate participatory visualization and resilience tools with the CRI will provide facilitators an effective means to take the results of the CRI to the next step of ways communities may practically address priorities flagged in the CRI self-assessment process.

Project Approach:

What NOAA and Sea Grant programs and assets will be involved?

- Louisiana Sea Grant staff time will be contributed as match for this effort.
- NOAA staff will collaborate on the project.
- NOAA will provide an additional $7800 in FY2017 Gulf of Mexico Regional Collaboration Team funds to support a student participating in development of the enhanced CRI. Responsibilities may include support for the focus group meeting or workshop(s), examining issues associated with on-the-ground implementation of best practices in adaptive management, or other relevant tasks.

How will the NOAA Regional Collaboration Team(s) be involved?
The Gulf of Mexico Regional Collaboration Team (Gulf Team) will be co-lead on developing the focus group meeting for formally integrating participatory visualization and/or other community resilience-oriented tools into the CRI. The Gulf Team will serve as a venue for assessing which tools may be most appropriate for integration with the CRI, and obtaining buy-in and participation from relevant tool developers in NOAA.

Will other partners be involved?
Texas Sea Grant
Mississippi-Alabama Sea Grant
Florida Sea Grant
Gulf of Mexico Climate and Resilience Community of Practice
NOAA Offices (TBD – Office for Coastal Management, Office of Response and Restoration, Weather Forecast Offices)
Gulf of Mexico Alliance Resilience Priority Issue Team
Louisiana Department of Natural Resources

Key Milestones:

- First Quarter
  - Develop the focus group
  - Project team develop rough outline for enhanced CRI
- Second Quarter
  - Hold the focus group meeting
  - Pick the pilot communities
- Third Quarter
  - Pilot the project in 2-3 communities (one at CoP)
  - Presentation at CoP
- Fourth Quarter
  - Synthesis report
  - Webinar trainings for existing and new CRI facilitators

Data sharing plan

Data collection through this process is minimal. All data will be collected in compliance with Institutional Review Board procedures. All members of the project team own and use current computing equipment needed for this work. All computers are backed up to external hard drives. All data, outreach documents, publications, and related project material will be archived on the Louisiana Sea Grant server to ensure access to project materials in the future.

Community resilience self-assessment data (qualitative and quantitative) will be collected during the course of this project. This will include both resilience scores and discussions. While the actual results of the resilience indices are for the participants only, all data collected will be summarized and included in the project report that is made available to the public; the project report will not directly identify the participants in order to keep the self-assessment scores confidential. At this time, there are no plans to formally publish any of the raw data collected. The reason for confidentiality with the scores is that the project team has found that this better ensures an open and honest discourse with the participants.

All significant project findings will be prepared and submitted for publication in appropriate outlets. The PI will be responsible to ensuring that the outreach documents accurately reflect the findings of the project. In addition to publications, the project team will utilize other methods of distribution of research findings, including social media (Facebook, Twitter), publishing on the website, and conference presentations. Publications will be archived with the National Sea Grant library, which is publically accessible online.